AMENDMENTS TO THE CLAIMS

The following listing of claims shall replace all prior listings, and versions, of claims in the present application.

Listing of Claims:

1. (Currently Amended) A method of compensating for chromatic dispersion in an optical signal transmitted on a long-haul terrestrial optical communication system including a plurality of spans, said method comprising:

allowing chromatic dispersion to accumulate over a plurality of spans in a transmission path, said transmission path including a plurality of high loss spans, at least some of said high loss spans extending from one optical amplifier to another optical amplifier; and

identifying a plurality of non-periodically spaced low loss spans in said transmission path, at least some of said low loss spans extending from one optical amplifier to another optical amplifier, each of said low loss spans having an associated loss lower than a loss associated with each of said high loss spans in said transmission path;

compensating for dispersion accumulated on said plurality of spans using a plurality of separate dispersion compensating fibers, each of said dispersion compensating fibers being directly coupled to an associated one of said low loss spans.

2. (Cancelled).

3. (Previously presented) The method of claim 1, wherein at least one of said dispersion compensating fibers is disposed between stages of a multi-stage rare earth doped amplifier.

4. (Previously presented) The method of claim 3, wherein said rare earth doped amplifier is an erbium doped amplifier.

5. (Previously presented) The method of claim 1, wherein at least one of said dispersion compensation fibers is disposed in an amplifier following said low loss span.

6. (Previously presented) The method of claim 1, wherein at least one of said dispersion compensating fibers is disposed between a Raman portion and an EDFA portion of a Raman/EDFA amplifier.

7. (Original) The method of claim 6, further comprising:

configuring a gain of said Raman portion to achieve a desired noise figure level for said Raman/EDFA amplifier.

8. (Original) The method of claim 7, wherein said gain of said Raman portion is about 10-15dB.

9. (Original) The method of claim 7, further comprising:

configuring a gain of said EDFA portion to achieve a predetermined total gain for said Raman/EDFA amplifier.

10. (Original) The method of claim 9, wherein said gain of said EDFA portion is about 5-15 dB.

11. (Original) The method of claim 6, wherein said EDFA portion of said Raman/EDFA amplifier is a single-stage EDFA.

12. (Previously presented) The method of claim 1, wherein said signal is transmitted a distance of greater than 600 kilometers.

13. (Cancelled)

14. (Cancelled).

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled).

19. (Cancelled)

20. (Currently Amended) A method of communicating an optical signal on an optical communication system comprising:

transmitting said optical signal over an optical path, said optical path including a plurality of spans, at least some of said spans extending from one optical amplifier to another optical amplifier;

allowing chromatic dispersion to accumulate over a group of said plurality of spans of said optical path to a first predetermined level;

amplifying said optical signal with at least one Raman/EDFA amplifier coupled to said optical path, said amplifier comprising a Raman portion having a Raman gain selected to achieve

a desired noise figure level for said Raman/EDFA amplifier and an EDFA portion having an EDFA gain selected to achieve a predetermined total gain for said Raman/EDFA amplifier;

~~allowing chromatic dispersion to accumulate over a plurality of spans of said optical path to a first predetermined level before amplifying said signal with said Raman/EDFA amplifier~~; and

non-periodically compensating for accumulated dispersion of said optical signal using a dispersion compensating fiber disposed between said Raman portion and said EDFA portion of said at least one Raman/EDFA amplifier.

21. (Cancelled).

22. (Original) The method of claim 20, wherein said Raman gain is about 10-15db.

23. (Original) The method of claim 20, wherein said EDFA gain is about 5-15dB.

24. (Original) The method of claim 20, wherein said EDFA portion of said Raman/EDFA amplifier is a single-stage EDFA.

25. (Original) The method of claim 20, wherein said signal is transmitted a distance of greater than 600 kilometers.

26. (Previously presented) The method of claim 20, wherein said dispersion compensating fiber is disposed within said Raman portion of a Raman/EDFA amplifier.

27. (Previously presented) An optical communication system comprising:

a transmitter configured to transmit an optical signal over an optical information path to a receiver, said optical information path comprising:

a plurality of spans including high loss spans and low loss spans, at least some of said spans extending from one optical amplifier to another optical amplifier, each of said low loss spans having an associated loss lower than a loss associated with said high loss spans; and

a plurality of Raman/EDFA amplifiers having a Raman portion and an EDFA portion, wherein at least one Raman/EDFA amplifier of said plurality of Raman/EDFA amplifiers further includes at least one dispersion compensating fiber coupled to one of said low loss spans such that said optical communication system is configured to allow dispersion to accumulate in said high loss spans and to compensate for dispersion directly following said one of said low loss spans.

28. (Original) The system of claim 27 wherein said dispersion compensating fiber is disposed between said Raman portion and said EDFA portion.

29. (Original) The system of claim 27 wherein said dispersion compensating fiber is disposed within said Raman portion.

30. (Previously presented) The method of claim 1, wherein said loss associated with said high loss spans is between about 15-25dB, and wherein said loss associated with said low loss spans is between about 5-15dB.

31. (Previously presented) The method of claim 1 wherein identifying at least one low loss span includes identifying a plurality of low loss spans in said transmission path, and wherein compensating for dispersion includes compensating for dispersion using dispersion compensating fibers directly coupled to each of said low loss spans.

32. (Previously presented) The method of claim 27, wherein said loss associated with said high loss spans is between about 15-25dB, and wherein said loss associated with said low loss spans is between about 5-15dB.